

GUIDING PRINCIPLES FOR FOREST ECOSYSTEM RESTORATION AND COMMUNITY PROTECTION: WILDLIFE HABITAT

Preamble to the Guiding Principles

In response to increasing threats posed by wildfire, in 2003, Arizona Governor Janet Napolitano established the Forest Health Advisory Council and Forest Health Oversight Council. Subsequently, the Councils established a Statewide Strategy Subcommittee tasked with developing a long-term strategy to restore forest health, protect communities from fire, and encourage appropriate, forest-based economic activity. Recognizing the interdependence between forest ecosystem health and associated wildlife, and the importance of those resources to present and future generations of Arizonans, the Statewide Strategy Report (2003) recommended that forest management practices should be designed to integrate wildlife habitat needs and biodiversity conservation. To that end, they recommended that the Forest Health Council, Arizona Game and Fish Department, and other stakeholders work together to develop a set of principles and strategies to accomplish this objective.

This document is a first step in that process, setting forth general guiding principles for wildlife habitat that should be considered in restoration and other forest treatment projects. It is intended for resource managers, stakeholders, and decision-makers. These principles are starting points that can be used to define objectives, select treatments, and develop monitoring strategies. We anticipate that specific strategies will be developed as managers develop, apply, and evaluate new forest treatments.

Forest ecosystems are dynamic and wildlife evolved within natural disturbance regimes.

Restoration and other forest treatments should emphasize creation of conditions within the range of natural variability (RNV), in which fire and other natural processes can operate to the fullest extent possible. Such conditions are conducive to long-term ecosystem sustainability and beneficial to wildlife. Because variables such as temperature and precipitation are key factors shaping RNV, management benchmarks may need to be adjusted to reflect impacts of climate change on plant communities.

Wildlife habitat is more than just trees. While forest treatments typically focus on the live tree component, other biotic (e.g., snags, downed woody material) and abiotic (e.g., water sources) habitat components are important to wildlife and need to be considered as well.

Diversity is an essential habitat requirement of forest wildlife. Historically, Arizona forests exhibited a wide range of conditions within the range of natural variability. This diversity was reflected in attributes of the tree component (e.g., density, size, and spacing), the size and distribution of forested patches and openings, and associated shrubs and understory vegetation. Treatments that recreate such diverse conditions will be most beneficial to wildlife and reduce risk of habitat loss or degradation from wildfire.

Wildlife habitat requirements vary spatially and temporally. Many wildlife species range over large areas and utilize a variety of forest conditions. Meeting these needs is best accomplished by planning at large scales (e.g., landscape or watershed), rather than attempting to integrate numerous smaller projects. At the project level, it is also important to consider smaller-scale habitat features that are important to wildlife.

Connectivity is essential to long-term viability of wildlife populations. Restoration and forest treatment projects must consider establishment and maintenance of linkages among habitats. This can best be done by integrating these activities with plans developed for transportation and other land uses.

Changes in forest habitat conditions affect a broad array of stakeholders, who embrace both consumptive and non-consumptive wildlife values. These stakeholders should be educated and fully engaged in all steps in the process, from developing objectives to treatment implementation and evaluation.

Adverse effects to wildlife populations and habitats should be avoided. Forest treatments can have unintended and undesirable secondary impacts, including spread of invasive plants and expansion of road networks, with increased vehicle traffic and associated disturbance. These impacts should be prevented or reduced to the fullest extent possible.

Restoration and related forest treatments represent a new management paradigm and an important learning opportunity. These efforts should be undertaken in an adaptive management context that includes rigorous monitoring of wildlife species and/or habitat components, with a clearly defined feedback mechanism into the decision-making process. Information obtained through monitoring should be disseminated to all stakeholders.